



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

MAEVE VALLELY BARTLETT
Secretary

DAVID W. CASH
Commissioner

**MassDEP
Bureau of Waste Prevention
Division of Air and Climate Programs**

310 CMR 60.05:

**Global Warming Solutions Act Requirements for the Transportation Sector and the
Massachusetts Department of Transportation**

Background Document and Technical Support for Public Hearings

**Regulatory Authority: Massachusetts General Laws Chapter 21N and Chapter
111, Sections 142A through 142M**

October 2014

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Background Document and Technical Support for Public Hearing

To Consider Amendments to:

310 CMR 60.05:

Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation

September 2014

I. INTRODUCTION

The Massachusetts Department of Environmental Protection (MassDEP) is proposing amendments to 310 CMR 60.00, Air Pollution Control for Mobile Sources, by adding section 310 CMR 60.05 - Global Warming Solutions Act (GWSA) Requirements for the Transportation Sector and the Massachusetts Department of Transportation (MassDOT). In keeping with the Climate Protection and Green Economy Act, as codified at M.G.L. c. 21N(3), the regulation would:

- Establish a requirement that the metropolitan planning organizations (MPOs) in Massachusetts evaluate and track the greenhouse gas (GHG) emissions and impacts of regional transportation plans (RTPs), transportation improvement programs (TIPs), and state wide TIPs (STIPs) and projects included in TIPs;
- Establish a requirement that the MPOs, in consultation with MassDOT, develop and utilize procedures to prioritize and select projects in RTPs, TIPs, STIPs based on factors that include GHG emissions and impacts;
- Establish a requirement that MassDOT demonstrate that its commitments included in the Clean Energy and Climate Plan (CECP) for 2020 (including actions that support the 2050 reduction strategies) are implemented or, if necessary, supplemental measures, including achieving target GHG emissions from the transportation sector and/or MassDOT's activities, are identified and implemented.

II. BACKGROUND

Overview

Chapter 298 of the Acts of 2008, the Massachusetts Global Warming Solutions Act (GWSA), was passed by the legislature and signed into law by Governor Patrick in August 2008 to address the challenges of climate change. Subsequently, as required by GWSA, the Secretary of the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) issued the Massachusetts CECP for 2020 in 2010.

(See <http://www.mass.gov/eea/waste-mgmt-recycling/air-quality/green-house-gas-and-climate-change/climate-change-adaptation/mass-clean-energy-and-climate-plan.html>)

Several of the policies included in the plan address transportation and the need to reduce greenhouse gas (GHG) emissions from this sector.

In addition to the transportation policies in the CECP for 2020 that improve vehicle efficiency and decrease GHG emissions from vehicles, increase lower carbon fuels, and reduce vehicle miles traveled (VMT), the CECP for 2020 includes components of MassDOT's sustainability initiative known as "GreenDOT." The overarching goals of GreenDOT are to reduce GHG emissions, promote healthy modes of transportation, and support smart growth development. The GreenDOT Policy Directive (see <https://www.massdot.state.ma.us/portals/0/docs/P-10-002.pdf>) was issued by the Secretary of Transportation in June of 2010 and elements of it were included in the CECP for 2020 issued by the Secretary of EOEEA in December of 2010.

GreenDOT is implemented by MassDOT's GreenDOT Office; the MassDOT organizational unit that is responsible for coordinating MassDOT activities that support GreenDOT goals and principles, and that tracks progress toward GreenDOT goals and GHG reduction targets.

Summary of MassDOT's GreenDOT Policy Directive, as included in the CECP for 2020

GREENDOT Policy summary: GreenDOT is the Massachusetts Department of Transportation's sustainability initiative, announced through a Policy Directive in June 2010 by the Secretary of Transportation. The Commonwealth's consultants, Cambridge Systematics, Inc., estimated that, if fully implemented, GreenDOT could achieve 2.1 million tons of GHG reductions in 2020 and the Secretary's Directive adopts this level as its target.

GreenDOT is intended to fulfill the requirements of several state laws, regulations, Executive Orders, and MassDOT policies, including the Global Warming Solutions Act, the Green Communities Act, the Healthy Transportation Compact, and the "Leading by Example" Executive Order Number 484 by Governor Patrick. MassDOT will work closely with DEP and the Advisory Group in determining the best regulatory and guidance framework for achieving the goals set forth in the Policy. GreenDOT is focused on three related goals: reduce GHG emissions; promote the healthy transportation modes of walking, bicycling, and public transit; and support for smart growth development.

GreenDOT encompasses a number of different program areas, which are described briefly below: statewide and regional long-range transportation planning, transportation project prioritization and selection, "complete streets" design guidelines, rail transportation, bicycle and pedestrian transportation, promotion of eco-driving, sustainable design and construction, system operations, facilities management, and travel demand management.

Transportation long-range planning and project prioritization and selection: Long-range planning documents, including statewide planning documents (e.g. the Strategic Plan, State Freight Plan, and MassDOT Capital Investment Plan), as well as the long-range Regional Transportation Plans from the Metropolitan Planning Organizations (MPO), must address MassDOT's three sustainability goals and plan for reducing GHG emissions over time. Similarly, the shorter-range regional and state Transportation Improvement Programs (TIPs and STIP), under which particular projects are chosen for funding in the coming four years, must be consistent with the Commonwealth's GHG reduction target. This will require that the MPOs and MassDOT balance highway system expansion projects with other projects that support smart growth development and promote public transit, walking and bicycling. In addition, the project programming mix included in the RTPs, TIPs and STIP can contribute to GHG reduction through prioritizing roadway projects that enable improved system operational efficiency, without expanding overall roadway system capacity.

Over the long term, both long-range planning and project selection will affect where new development in the Commonwealth is located and how that development is spatially configured. These choices affect the degree to which future development represents —smart growth, or clustered development patterns that facilitate walking, bicycling, riding public transit and driving shorter distances, which would minimize the number of motor vehicle miles that people must travel in order to go about their lives.

Project design and construction: The MassDOT Highway Division Project Development and Design Guide requires that all projects must adhere to a “complete streets” design approach, meaning that new and redesigned roads must provide appropriate accommodation for all users, including pedestrians, bicyclists, and public transit riders. These modes of transportation will also be promoted by several other means. These include taking steps to see that more projects move forward through the Transportation Enhancements Program, extending the Bay State Greenway, improving accommodations for bicycles and pedestrians on bridges, and improving bicycle parking facilities at MBTA stations.

Several efforts will continue to improve rail transportation in the state. The MBTA is striving to both improve service on existing subway and commuter rail lines and to develop new service, such as the Green Line Extension and the South Coast Rail Project. Other projects will improve long-distance rail service for both passengers and freight.

MassDOT project design and construction will also reduce GHG impacts through such measures as the use of recycled content in paving materials, use of warm mix asphalt paving, implementation of stormwater remediation and use of best management practices, requirements for diesel engine retrofits for construction contractor vehicles, and other measures.

Travel demand management and travel information: MassDOT will continue to promote and deliver travel demand management (TDM) information and services, including ride matching, traveler information, real-time bus tracking, and other measures

for the general public and among MassDOT employees. MassDOT is currently working to implement a new ridematching/trip planning system to facilitate carpooling, vanpooling, and mode shifting from automobile travel.

Eco-driving: Fuel efficiency can be improved greatly by maintaining vehicles properly, driving within the speed limit, and accelerating more gently. The EPA estimates that —smart driving— can improve fuel efficiency by up to 33 percent, and EcoDriving USA estimates that Massachusetts’ drivers, with 5.4 million registered autos, could save about 4 million tons of CO₂ emissions annually if eco-driving practices were followed. MassDOT will promote eco-driving through: internal education for staff and contractors; external education of all Commonwealth drivers through website content, RMV manual and testing content, signage, and brochures; and development of a plan to improve tire inflation infrastructure.

System Operations: MassDOT, along with the MBTA and other regional transit authorities, will take a variety of steps to minimize fuel use and GHG emissions from vehicles and facilities. This includes retrofitting diesel buses with emission control devices, truck stop electrification, using solar and wind power at MassDOT facilities and rights-of-way, improving energy efficiency in MassDOT facilities, and increasing the share of low-emission transit vehicles in the MBTA fleet.

MassDOT will also facilitate more efficient roadway system operations; improvements that can reduce GHG emissions by reducing congestion and time spent idling in traffic. MassDOT will do this through the effective management of roadway capacity, using intelligent transportation systems - which may include such measures as real-time traveler information and management of traffic flow through improved traffic signal operations - ramp metering, and variable speed limits. MassDOT will also continue to address roadway system “bottlenecks,” or points of localized capacity constraints, improvements that can reduce GHG emissions when traffic flow is improved without expanding overall system capacity.

Specific Elements of GreenDOT included as GHG Emission Reduction Targets in the CECP for 2020 (in million metric tons of carbon dioxide equivalents (MMCO₂e))

The CECP for 2020 included four GreenDOT elements listed below that are projected to achieve GHG emissions reductions of 1.18 MMTCO₂e. The proposed regulation requires that MassDOT demonstrate that these measures are implemented and that the GHG reductions in the CECP for 2020 will be achieved. However, the regulation allows MassDOT to implement supplemental measures to achieve the GHG reductions, if necessary.

Smart Driving Education Heavy-duty Vehicles (HDVs)

0.06 MMTCO₂e (0.056 MMTCO₂e adjusted for overlap with other HDV policies)

Bicycle/pedestrian facilities/transit investments

0.20 MMTCO₂e (0.177 MMTCO₂e adjusted for overlap with other light-duty vehicle (LDV) policies)

Operation efficiency/development project mitigation/commuter choice

0.50 MMTCO₂e (0.434 MMTCO₂e adjusted for overlap with other light-duty vehicle (LDV) policies)

Smart Driving Education for LDVs

0.42 MMTCO₂e (0.368 MMTCO₂e adjusted for overlap with other LDV policies)

Total: **1.18 MMTCO₂e** (*1.04 MMTCO₂e adjusted for overlap*)

III. SUMMARY OF PROPOSED AMENDMENTS TO 310 CMR 60.00

General Requirements

MassDEP is proposing a new section to 310 CMR 60.00, Air Pollution Control for Mobile Sources. 310 CMR 60.05, Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation, would:

- Establish a requirement that the MPOs in Massachusetts evaluate and track the GHG emissions and impacts of RTPs, TIPs, and STIPs;
- Establish a requirement that the MPOs, in consultation with MassDOT, develop and utilize procedures to prioritize and select projects in RTPs, TIPs, STIPs based on factors that include GHG emissions and impacts; and
- Establish a requirement that MassDOT demonstrate that its commitments included in the CECP for 2020 (including actions that support the 2050 reduction strategies) are implemented or supplemental measures, including achieving target GHG emissions from the transportation sector and/or MassDOT's activities, are identified and implemented, if necessary.

The proposed regulation includes specific actions MassDOT must take to demonstrate that the general requirements of the regulation are met, including:

- Determine that the GHG emissions are modeled and projected for horizon years 2020 and 2040, or the appropriate year for the plan, using appropriate planning assumptions;
- Determine that the MPOs have adopted and implemented project selection procedures that include consideration of GHG emissions;
- Calculate the GHG emissions of RTP, TIPs, and STIPs and evaluate the emissions relative to the 2020 and 2050 targets for transportation included in the CECP.

The mechanism for MassDOT to document these actions is to include a certification statement in its endorsement of RTPs, TIPs, and STIPs that these requirements have been met. MassDOT is required to meet these requirements for RTPs, TIPs, and STIPs that are endorsed by September 30, 2015 and thereafter.

Interagency Consultation and Public Consultation Procedures

The regulation includes interagency consultation procedures to ensure that GHG Assessments required by the regulation are based on appropriate emission modeling inputs and assumptions, analysis techniques, and models. MassDOT is required to consult with the MPOs, Regional Transit Authorities, Regional Planning Agencies, MassDEP and EOEEA prior to performing or conducting GHG analyses and including the GHG Assessments results in RTPs, TIPs, or STIPs. MassDOT and the MPOs are also required to provide an opportunity for public review and comment on the GHG Assessments in RTPs, TIPs, or STIPs prior to the final endorsement by the MPOs of these documents.

Department Review

The regulation requires MassDOT and the MPOs to submit the MPO endorsed RTP, TIPs, and STIPs to MassDEP within 30 days of the endorsement for MassDEP review. MassDEP is required to review the GHG Assessment and issue a written finding of concurrence or non-concurrence within 30 days. If MassDEP issues a finding on non-concurrence, MassDOT and the MPOs will convene a meeting within 30 days to resolve the issues that resulted in the finding on non-concurrence.

IV. ECONOMIC IMPACTS

The proposed regulation, Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation, is consistent with and supports the goals of GWSA and the CECP for 2020. The elements of GreenDOT included in the CECP for 2020 include: Smart Driving Education for HDVs; Bicycle and Pedestrian facilities and transit investments; Operation efficiency, development project mitigation, and commuter choice; and Smart Driving Education for LDVs. These measures and programs will result in GHG reductions while assisting in providing operational efficiencies in the transportation system, and options for lower cost transportation for Massachusetts citizens and businesses, resulting in fuel savings and other economic benefits (e.g., reduced congestion).

V. IMPACT ON OTHER MASSDEP PROGRAMS

Air Toxics

Air toxics are a group of chemical air contaminants, defined by EPA, that have been associated with wide-ranging and significant adverse health effects such as cancer, birth defects, and central nervous system impairments. EPA regulates air toxics under the Clean Air Act. In addition, MassDEP controls air toxics through its Toxics Use Reduction Program and other programs that are aimed at reducing ozone. Many air toxics are VOCs, which are regulated as ozone precursors. To the extent that these proposed amendments result in reduced fuel use, air toxics emissions will be reduced.

Toxics Use Reduction

Toxics use reduction is defined as in-plant or in-process practices that reduce or eliminate the use and emissions of toxic materials into the environment. Implementation of toxics use reduction, when possible, is a MassDEP priority. The proposed regulations do not regulate in-plant or in-process practices and therefore will not have any effect on the use and emissions of toxic materials.

VI. AGRICULTURAL IMPACTS

Pursuant to Massachusetts General Laws, Chapter 30A, Section 18, State agencies must evaluate the impact of proposed programs on agricultural resources within the Commonwealth. The proposed amendments do not impose any requirements upon agricultural operations, but to the extent that GHG emissions are reduced and climate changes lessened could have a positive effect on agriculture.

VII. IMPACT ON MASSACHUSETTS MUNICIPALITIES

Pursuant to Executive Order 145, State agencies must assess the fiscal impact of new regulations on the Commonwealth's municipalities. The proposed amendments do not impose any additional direct costs, recordkeeping, reporting, or other requirements on local governments.

VIII. MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

The proposed amendments are exempt from the "Regulations Governing the Preparation of Environmental Impact Reports," 301 CMR 11.00, in that no MEPA review threshold set forth in 310 CMR 11.03 is met or exceeded. In addition, these proposed amendments do not reduce standards for environmental protection, nor do they reduce opportunities for public participation in review processes or public access to information generated or provided in accordance with the regulations. (See MEPA review threshold pertaining to promulgation of regulations at 301 CMR 11.03(12)).

IX. SMALL BUSINESS IMPACT STATEMENT

The proposed regulations are not expected to have any negative impact on small businesses.

X. PUBLIC PARTICIPATION

As required by M.G.L. c. 111, Section 142K and M.G.L. c. 30A MassDEP gives notice and provides the opportunity to review background and technical information at least 21 days prior to proposing the regulation amendments at a public hearing. The hearing will be held in Boston. A

copy of the proposed amendments and this background document are available on MassDEP's website at:

<http://www.mass.gov/dep/service/regulations/newregs.htm#proposed>

Copies can also be obtained at MassDEP's headquarters at One Winter Street, Boston.

Please send comments to: MassDEP, One Winter Street, Boston, MA 02108.